dent, Wm. H. Ashmead; Vice-Presidents, Theodore Gill and C. L. Marlatt; Recording Secretary, L. O. Howard; Corresponding Secretary, F. H. Chittenden; Treasurer, E. A. Schwarz; additional members of the Executive Committee, George Marx, B. E. Fernow, and C. V. Riley.

The delivery of the annual address of the outgoing President, Prof. C. V. Riley, was postponed for one month.

—The first paper of the evening was by Mr. C. L. Marlatt, entitled "Revision of the genus *Pontania*, Costa, with Descriptions of New Species." The relationship of this genus, which is a subdivision of the old genus Nematus, was explained, and its characters pointed out. A list of seventeen species which will belong to it in the North American fauna was given, and the prominent characters which may be used in the classification of these species and in their differentiation were explained. The genus includes *small* species of the old genus Nematus of gall-making habits, so far as known, and include the well-known species *salicis-pomum* and *pisum* making the common leaf-galls of the willow. Seven of the species are new. In answer to a question by Prof. Riley, Mr. Marlatt pointed out the salient characters separating the genus Pontania from Euura, the species of the latter genus, in gall-making habit, being closely allied to the former.

—Mr. Chittenden presented, by title, the following paper:

ON THE HABITS OF SOME LONGICORNS.

By F. H. Chittenden.

The notes which follow are based on the writer's personal experience, and the dates of rearings given are, for the most part, as in nature. In very many instances the material from which the species herein mentioned were reared was gathered but a few days before the transformation of the insects and kept in an unheated room.

In referring to published records the observer's name is mentioned for authority, as most of these records are to be found in Dr. A. S. Packard's report on forest insects (Fifth Report U. S. Ent. Comm.) and that of Mr. A. D. Hopkins (Bull. 33, W. Va. Agl. Expt. St.). Other records are given in articles by Dr. C. V. Riley and Dr. J. L. LeConte in the third volume of the *American Entomologist*.

Parandra brunnea Fab.—This is one of the most omnivorous of longicorns. Living, as it evidently does, chiefly in decomposing wood, it infests both deciduous and coniferous trees. In my notes its occurrence is recorded under the bark of oak and apple; in cherry wood (*Prunus cerasus*), just beneath the tightly-clinging bark, and on willow (*Salix alba*), deeply buried in the rotten wood. Mr. W. H. Ashmead has recently shown me specimens taken under the bark of maple. I have also seen specimens found under bark of elm and basswood, and Mr. M. L. Linell informs me that he found it in abundance in the hollow trunks of *Ailanthus glandulosus* growing in the streets of Brooklyn, N. Y. At Spring Lake Beach, L. I., it occurred under bark of pitch pine (*Pinus rigida*). Dr. LeConte also states that the species of this genus live under pine bark (Class. Col. N. A., pt. II, p. 280). Others have recorded as food-plants: beech (Horn), ash (Riley), and *Tilia americana* (Townsend). At Washington, D. C., I have taken it at lights during the second week of June. At Ithaca, N. Y., it appeared in July.

Callidium æreum Newm. was reared from the wood of chestnut (*Castanea dentata*) on two occasions: at Ithaca, N. Y., May 14, and at Clifton, N. J., May 30, occurring also in June.

Elaphidion villosum Fab., under which name I include also *parallelum* Newm., has most often been noticed as infesting oak and hickory; Haldeman has recorded chestnut and Abies (!); apple, plum, and grape have been added by Dr. Riley, and peach and walnut by Professors Cook and Hopkins respectively. To this I may add that I have reared the species from pruned twigs of quince, locust, red-bud (*Cercis canadensis*), and from trimmed ends of twigs of Osage orange (*Maclura aurantiaca*). In past years I have seen pear trees very extensively pruned by this insect; also the climbing bitter-sweet (*Celastrus scandens*). More recently I have ascertained that this or allied species attack almost every woody plant that grows. In the vicinity of Washington the genus Elaphidion is not so abundant as in most northern localities that I have visited, but pruned twigs of various trees and shrubs are of frequent occurrence, among which I have noted spice-bush (*Lindera benzoin*), *Sassafras officinale*, sumach (*Rhus glabra* and *typhina*).

It has been noticed that this, as well as related species, does not always prune the twig in which it lives, but I do not remember to have seen mention of the fact that the insect sometimes remains in the proximal end of the limb attached to the tree, while the severed end is as often found empty, thus reversing the usual order of affairs.

The species is evidently parasitized by *Bracon eurygaster* Brullé.

Phyton pallidum Say is one of the species mentioned by Dr. LeConte as having bred from hickory. It lives also in *Cercis canadensis*, passing its earlier stages under the bark and appearing as a beetle in the latitude of Washington during the latter part of June and continuing till toward the close of July.

Curius dentatus Newm. also breeds in *Cercis canadensis*, appearing abroad in this neighborhood early in July.

Molorchus bimaculatus Say was reared from dead twigs and branches of ash (*Fraxinus americana*), dogwood (*Cornus florida*), *Cercis canadensis*, and from the larva found in a wild maple sprout. The adult insects abound on flowers of different species of Prunus, Cornus, Viburnum, *et. al.*, in New York State, occurring in May and June; about Washington, also, in April. This is included in the list of hickory species by Dr. LeConte, and, according to Glover, infests also walnut.

Rhopalophora longipes Say is not uncommon in Maryland and Virginia near Washington. May 21 a few sections of branches of red-bud were gathered from which the beetle was reared May 24, others issuing early in June. It also occurs in July, frequenting the flowers of *Ceanothus americanus* and *Hydrangea arborescens*.

Xylotrechus colonus Fab., a general feeder, partial to oak, maple, and hickory, was reared on two occasions from chestnut, June 8–14. It is parasitized by the rare Ichneumonid, *Xylonomus rileyi* Ashm., a single example of which was reared June 15, Rosslyn, Va.

Neoclytus erythrocephalus Fab. is one of our most polyphagous species, having seemingly no favorite food-plant. I have reared numerous specimens, always in about equal abundance in trunk and branch, from *Cornus florida*, tulip (*Liriodendron tulipifera*), locust (*Robinia pseudacacia*), *Cercis canadensis*, hickory, and grape-vine, and have observed the adults on oak and apple, usually copulating and in such abundance that there could be no doubt as to the meaning of their presence. At Washington the beetle occurs from the last of April till toward the end of July.

Individuals reared from locust were from twigs kept two years indoors. In dogwood the larval galleries are very extensive, the younger larva evidently passing a considerable portion of its time under the bark, afterward penetrating the solid wood, which is still more extensively bored. The pupal cell is often placed in the centre of a large twig, the larva having previously excavated an exit-hole to the bark.

It is also said to infest elm (Hubbard), persimmon, maple, willow, and peach (Hopkins).

In the dogwood great numbers of Braconid cocoons were noticed in the larval galleries of this Cerambycid. Such of these as were gathered and carried to maturity produced *Bracon eurygaster* Br., previously recorded by me as a probable parasite of *Elaphidion villosum* Fab. The large Clerid beetle *Chariessa pilosa* Forst. was reared from pupæ taken under similar conditions, and probably preys on the *Neoclytus* larvæ.

Cyrtophorus verrucosus Ol.—I have reared this species from a chestnut limb, the imago issuing in confinement, March 18, Ithaca, N. Y., and have found the beetle in its pupal cell in a decaying and badly bored beech (*Fagus atropunicea*) at the same place, March 29. At South Woodstock, Conn., the imago was again taken from its pupal cell in recently dead, hard wood of European linden (*Tilia europæa*). Specimens also occurred at Ithaca in April on dying locust, and it probably infests this tree. It has also been obtained by Dr. J. Hamilton and others from the rough bark of oak, by Dr. F. Hadge from quince and by J. G. Jack from *Prunus pennsylvanica*.

This is one of the exceptional longicorns which sometimes mature in the fall and remain in the pupal chamber till spring. It is an early spring arrival, frequenting the flowers of the dogwoods from the date of their blooming, and continuing till late in June.

Euderces picipes Fab.—A specimen was bred from a dead chestnut twig at Ithaca, N. Y., July 20. Larvæ, without doubt of this species, were observed under bark of this twig March 22, over two years previous to this rearing, and this individual had therefore consumed at least three years in completing its transformations—a retardation in development undoubtedly due to the unnatural dryness caused by indoor breeding. The imago frequents the flowers of dogwood, elder, wild parsnip and carrot, and others, occurring in June and throughout July.

In spite of the abundance of the Lepturini, both in individuals and species, particularly in our northern states, very little is known of their larval food-habits further than a few records of some of the more common species. Several are known to pass their larval existence in old and decaying wood, and it is not probable that they are very discriminating in taste. Hence it would not be surprising to find some species in the group that breed indifferently in both deciduous and coniferous trees.

Leptura vagans Ol.—Larvæ, together with the dead imago in its pupal chamber, were cut from old and decomposing wood of bitter-nut hickory, *Hicoria minima* (*Carya amara*), at Ithaca, N. Y., in December. About this time Dr. A. E. Brunn

discovered in dead birch wood a larva which agreed perfectly with the above. This larva, at the time of its coming into my possession, was much shrivelled and fast drying up. My own specimens having died, I placed this larva, by way of experiment, in the hollow cavity of a hickory twig pruned by Elaphidion. The Leptura thrived in this improvised home and transformed to imago June 11. The imago also occurs in July, frequenting the flowers of chestnut.

Cyrtinus pygmæus Hald. occurs rather commonly between New York city and Washington on locust, hickory, and box-elder (*Negundo negundo*). On the last-mentioned tree numerous small holes were noticed in the terminal twigs on which the imagos were resting or crawling, and which were without doubt made by them in exit. Dr. J. B. Smith found this species under similar circumstances on oak (*Ent. Am.*, VI, 137), and Mr. Schwarz has reared it from locust (Pr. Ent. Soc. Wash., II, 73); hence I feel no hesitation in placing hickory and box-elder on the list. About Washington the beetles have been noticed during June and July.

Acanthoderes quadrigibbus Say breeds in box-elder, all of the galleries seen, in a large trunk, being in the main longitudinal and situated immediately under or very near the bark. This species was bred by LeConte from hickory, and, according to Mr. Schwarz, attacks also oak, beech, and hackberry. It is parasitized by a large Braconid, evidently Bracon, the empty cocoons only having been found.

Leptostylus parvus Lec. occurs near Washington, on box-elder and tulip, having been beaten from dead branches, in about equal numbers, in the latter part of June and first of July.

Leptostylus biustus Lec.—June 17 my attention was attracted by a series of sharp, ticking sounds emanating from some jars of twigs in my apartments. The sound continuing, it was traced directly to its exact source on a twig, which, on removing the bark, disclosed, much to my surprise, a longicorn pupa with which I was unfamiliar. Subsequently other portions of the twig were decorticated, resulting in the discovery, June 20, of *Leptostylus biustus* in all its stages; the imago, however, had not fully matured and could not have issued until two or three days later.

This ticking sound resembled in every particular that made by *Liopus cinereus* Lec., which I had always, and correctly, attributed to the larva. That such a sound can be also produced by a pupa I do not remember to have ever seen recorded. To me this is a subject of sufficient interest to invite further inquiry. The larva of *Liopus cinereus* certainly produces this sound, as

does the pupa of *Leptostylus biustus;* now the question is, how is it produced, and for what reason, and by what stages in different species?

Of other records, Dr. Riley mentions the rearing of this long-icorn "from a dried-up pomegranate," and Mr. Hubbard, in his bulletin on "Insects affecting the Orange" (p. 174), has given an account of its breeding under the bark of orange.

Leptostylus macula Say breeds in almost all kinds of deciduous trees and shrubs. I have reared it from larvæ found under the bark of beech, chestnut, maple, butternut, and sumach, and have beaten specimens from the following trees in such abundance as to lead to the belief that they are all food-plants: box-elder, tulip, oak, and Carpinus. Mr. W. H. Harrington also records hickory, and Mr. Geo. E. Brackett, apple (Prac. Ent., 1, 19), as food-plants. At Ithaca the beetles occurred in greatest abundance from the latter part of June till the middle of July. Around Washington I have noticed imagos as early as May 5, and as late as July 26. The duration of the pupal state of two individuals observed was from fourteen to sixteen days.

Leptostylus collaris Lec.—I have noted the occurrence of what I take to be this species on chestnut on several occasions, the larvæ living under the bark, and the imago occurring, in the vicinity of New York city, throughout July and until August 8, the latter a rather late date for a Cerambycid.

Liopus variegatus Hald. was reared from hackberry (*Celtis occidentalis*), and from box-elder, being especially abundant on the latter tree. Five or six examples were beaten from a single dead branch of chestnut at Navesink, N. J., and a similar number from dead locust, and it probably breeds in both trees. A larva found under box-elder bark in April transformed to pupa May 1, and to imago May 17, which would give sixteen days as the duration of the pupal state. In the hackberry, which grew within a few yards of the box-elder, the beetle developed more than two weeks later than in the latter, the first specimen not appearing until May 30. Another did not pupate until June 4, and allowing sixteen days for the pupal period, the imago issued June 30. The cause of this difference was not due to food-plants nor to the age of the wood, but obviously to the fact that the box-elder was prostrate, moist, and exposed to the sun, while the hackberry was standing, dry, and constantly shaded. At Washington all stages are to be found during the last two weeks of May, the imago appearing as early as May 11, and continuing throughout the month of June.

Two enemies of this Cerambycid have been observed: an Ichneumonid parasite, *Ephialtes irritator* Fab., which lives

externally on the larva; and *Tenebroides corticalis* Melsh., the larva of which was detected in the act of devouring the Cerambycid pupa in its cell.

Liopus punctatus Lec. was reared from *Cornus florida*, the imago being first noticed May 14 in its pupal chamber, and continuing in this neighborhood to July 3. According to Mr. Hopkins, this species also infests plum.

Lepturges symmetricus Hald. was reared from the larva found under the bark of a trunk of dead hackberry (*Celtis occidentalis*). One larva transformed June 2 and became an imago June 12, thus passing ten days as pupa. Latest capture of imago, July 11.

A Braconid parasite, *Cenocœlius rubriceps* Prov., was reared from this species June 17.

Lepturges signatus Lec. breeds in the limbs of *Cercis canadensis*, beginning its transformations to pupa toward the close of April, the imago appearing about Washington in May and continuing throughout June. It also infests beech (Hopkins).

Lepturges querci Fitch, as its specific name would indicate, was originally taken by its describer on oak. I have reared it with the preceding species from red-bud, May 28, and beaten it from the twigs June 11. At Ithaca, where I reared it from hickory, specimens were found as late as July 21. I have reared with this species a Braconid which Mr. W. H. Ashmead identifies as *Calyptus magdalis* Cr.

Ecyrus dasycerus Say. was also reared from twigs of red-bud May 31. This specimen was kept until June 17, remaining, as far as could be seen, inactive during the entire time. The insect itself is heavy in conformation, and sluggish, as its appearance would indicate. It stridulates, after the manner of its kind, loudly and slowly. I have beaten this species from the twigs of tulip and locust at Rosslyn, Va., from May 23 to June 27. It is one of the species bred by LeConte from hickory.

Eupogonius vestitus Say.—A pupa was found in a twig of *Cornus florida* near Washington May 6, from which the beetle issued May 25. The pupal stage is evidently long in this instance, probably not far from three weeks. I have also beaten specimens from chestnut at Ithaca, June 30 to July 11, and Dr. Riley records as food-plant, hickory, and Mr. Hopkins, walnut.

Dysphaga tenuipes Hald.—A single specimen of this anomalous species was reared from *Cercis canadensis* May 23. The imago, with its long wings and undeveloped elytra, flies freely with a humming or buzzing sound like a bee. It has short legs and runs slowly. When held it stridulates feebly for its size.

Haldeman, who described this species in 1845 (Pr. Ac. Nat.

Sci. Phil., III, 126), says: "The larva inhabits detached branches of the genus Carya (hickory), the perfect insect appearing in May in S.E. Pennsylvania." Glover states that it also infests walnut. Although half a century has elapsed since the insect was described, it is still extremely rare. It has been recorded also from southern New Jersey; my specimen was obtained on the Virginia shore of the Potomac, and we may safely infer that the species also inhabits the intervening territory of Maryland, Delaware, and the District of Columbia.

—Mr. Howard presented the following paper, illustrating it by black-board drawings:

NOTE ON THE MOUTH-PARTS OF STENOPELMATUS.

By L. O. Howard.

Dr. Packard, in his "Review of the Systematic Position of the Orthoptera in Relation to other Orders of Insects," gives, with some detail, the relative characters of the typical insects throughout the order Orthoptera, but does not seem to have examined Stenopelmatus, a striking and somewhat aberrant form. A recent examination made of the mouth-parts of a single specimen indicates that the sclerites approach most nearly to those of Anabrus, as might have been expected. The submentum is represented by a transversely oval chitinous sclerite in the membranous wall of the gula. The mentum is a large rhomboidal sclerite whose transverse diameter exceeds its length. The ligula is slightly divided at tip and the paraglossæ are hairy and movable. The palpiger is indistinctly differentiated. The maxillæ in particular resemble those of Anabrus. The cardo is large and proceeds at right angles from the ligula. The stipes is inserted at right angles upon the tip of the cardo. The palpifer is small and indistinctly separated by a suture. The subgalea is narrow and weak. The lacinia is very large and strong and furnished with two teeth, the apical one being still further dentated into one large and one small tooth. The inner edge of the body of the lacinia is densely bristly. In the galea was exhibited a strange asymmetry which is my main object for referring to this insect. The right galea is stout, well rounded, and its tip is evidently functional as a masticating or piercing organ since its point is composed of dense dark-brown chitin. The left galea, on the contrary, becomes flattened and subfoliaceous at its tip, which appears almost membranous, is yellowish in color and evidently not at all fit for the same purpose as its mate. The labrum is very large and very movable, almost half as long as